

WHAT IS CLAIMED IS:

1. A tilt servo system comprising:

a sensor for detecting a tilt angle of a light beam emitted
5 from a pickup to an information storage medium;

a correction device for correcting a tilt angle of a light
beam relative to said information storage medium; and

a controller for allowing said correction device to correct
the tilt angle of said light beam in accordance with a sensor output
10 of said sensor, wherein

said controller employs, as a reference tilt error, a sensor
output delivered from said sensor when said pickup is located opposite
to a predetermined position of said information storage medium and
as a reference tilt correction quantity, a tilt correction quantity
15 set in order to allow said correction device to correct the tilt
angle of said light beam in response to said reference tilt error,
and

when said pickup is located opposite to a position other than
said predetermined position of said information storage medium,
20 said controller employs a difference between a sensor output
delivered by said sensor and said reference tilt error as a relative
correction quantity and controls said correction device in
accordance with a tilt correction quantity obtained by adjusting
said reference correction quantity according to said relative
25 correction quantity to thereby correct the tilt angle of said light
beam.

2. The tilt servo system according to claim 1, wherein

said sensor is a tilt sensor for emitting a predetermined light beam to said information storage medium to detect said tilt angle in accordance with an angle deviation of a reflected light beam.

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3. The tilt servo system according to claim 1, wherein

when said pickup is located opposite to said information storage medium at two different positions, said sensor determines said tilt angle in accordance with a ratio of a difference between two separations away from said information storage medium to a distance between said two positions.

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4. A tilt servo system for correcting a tilt angle between an objective lens incorporated into a pickup and an information storage medium, comprising:

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a phase correction device for adjusting a phase thereof relative to a light beam incident from a light source and allowing said information storage medium to be illuminated with said light beam via said objective lens;

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a storage device for storing drive data for driving said phase correction device to adjust said phase, said drive data being associated with each of a plurality of pre-estimated tilt angles;

a tilt sensor for detecting a tilt error of said objective lens relative to said information storage medium; and

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a controller for producing a tilt correction quantity by correcting said drive data stored in said storage device in accordance with the tilt error detected by said tilt sensor to drive said phase

correction device according to said tilt correction quantity,
wherein

said controller performs pre-processing to make a tilt
correction by moving said pickup to a predetermined area side of
5 said information storage medium and by adjusting a phase of said
phase correction device in accordance with the drive data stored
in said storage device, and to employ a tilt error detected by the
tilt sensor upon said tilt correction as reference tilt error data
and the drive data serving for said tilt correction as a reference
10 tilt correction quantity, and

after said pre-processing, said controller produces said tilt
correction quantity by acquiring from said storage device the drive
data corresponding to a relative correction quantity equivalent
to a difference between a tilt error detected by said tilt sensor
15 as said pickup moves and said reference tilt error data, and adding
said drive data to said reference correction quantity.

5. A tilt servo system for correcting a tilt angle between an objective
lens incorporated into a pickup and an information storage medium,
20 comprising:

an actuator for adjusting an angle of said objective lens
relative to said information storage medium;

a storage device for storing drive data for driving said
actuator to adjust the angle of said objective lens, said drive
25 data being associated with each of a plurality of pre-estimated
tilt angles;

a tilt sensor for detecting a tilt error of said objective

lens relative to said information storage medium; and

a controller for producing a tilt correction quantity by correcting said drive data stored in said storage device in accordance with the tilt error detected by said tilt sensor to drive said actuator according to said tilt correction quantity, wherein

said controller performs pre-processing to make a tilt correction by moving said pickup to a predetermined area side of said information storage medium and by driving said actuator in accordance with drive data stored in said storage device, and to employ a tilt error detected by the tilt sensor upon said tilt correction as reference tilt error data and the drive data serving for said tilt correction as a reference tilt correction quantity, and

after said pre-processing, said controller produces said tilt correction quantity by acquiring from said storage device the drive data corresponding to a relative correction quantity equivalent to a difference between a tilt error detected by said tilt sensor as said pickup moves and said reference tilt error data, and adding said drive data to said reference correction quantity.

6. A tilt servo system for correcting a tilt angle between an objective lens incorporated into a pickup and an information storage medium, comprising:

a phase correction device for adjusting a phase thereof relative to a light beam incident from a light source and allowing said information storage medium to be illuminated with said light beam via said objective lens;

a storage device for storing drive data for driving said phase correction device to adjust said phase, said drive data being associated with each of a plurality of pre-estimated tilt angles;

a focus servo device for controlling the position of said objective lens with respect to said information storage medium; and

a controller for producing a tilt correction quantity equivalent to a tilt angle in accordance with a separation between said information storage medium and said objective lens, when focused by said focus servo device, to drive said phase correction device according to the drive data in said storage device corresponding to said tilt correction quantity, wherein

said controller performs pre-processing: for moving said pickup to a reference position on a predetermined area side of said information storage medium to determine, as reference separation value data, a separation between said objective lens focused by said focus servo device and said information storage medium; for further moving said pickup from said reference position at appropriate intervals to determine, as separation value data, a separation between said objective lens focused by said focus servo device and said information storage medium at each position of movement at each interval of movement; for determining an angle of inclination at each position of movement from a ratio of a difference between separation value data at said mutually adjacent positions of movement to an interval of movement therebetween and also for determining a reference angle of inclination from a ratio of a difference between said reference separation value data at

said reference position and separation value data at a position of movement adjacent thereto to an interval of movement therebetween; and for further employing a difference between the reference angle of inclination and an angle of inclination at each position of movement as a relative correction quantity and the drive data in said storage device corresponding to the reference angle of inclination as a reference tilt correction quantity, and

after said pre-processing, said controller determines said tilt correction quantity, as said pickup moves, by adding the drive data in said storage device corresponding to the relative correction quantity at each of said positions of movement to said reference correction quantity.

7. A tilt servo system for correcting a tilt angle between an objective lens incorporated into a pickup and an information storage medium, comprising:

an actuator for adjusting an angle of said objective lens relative to said information storage medium:

a storage device for storing drive data for driving said actuator to adjust the angle of said objective lens, said drive data being associated with each of a plurality of pre-estimated tilt angles:

a focus servo device for controlling the position of said objective lens with respect to said information storage medium;

and

a controller for producing a tilt correction quantity equivalent to a tilt angle in accordance with a separation between

said information storage medium and said objective lens, when focused by said focus servo device, to drive said actuator according to the drive data in said storage device corresponding to said tilt correction quantity, wherein

- 5 said controller performs pre-processing: for moving said pickup to a reference position on a predetermined area side of said information storage medium to determine, as reference separation value data, a separation between said objective lens focused by said focus servo device and said information storage medium; for
- 10 further moving said pickup from said reference position at appropriate intervals to determine, as separation value data, a separation between said objective lens focused by said focus servo device and said information storage medium at each position of movement at each interval of movement; for determining an angle
- 15 of inclination at each position of movement from a ratio of a difference between separation value data at said mutually adjacent positions of movement to an interval of movement therebetween and also for determining a reference angle of inclination from a ratio of a difference between said reference separation value data at
- 20 said reference position and separation value data at a position of movement adjacent thereto to an interval of movement therebetween, respectively; and for further employing a difference between the reference angle of inclination and an angle of inclination at each position of movement as a relative correction quantity and the drive
- 25 data in said storage device corresponding to the reference angle of inclination as a reference tilt correction quantity, and
- after said pre-processing, said controller determines said

tilt correction quantity, as said pickup moves, by adding the drive data in said storage device corresponding to the relative correction quantity at each of said positions of movement to said reference correction quantity.